

have used unstandardized definitions of a preventable death and various methodologies to perform the preventability assessment. The proportion of preventable or potentially preventable death reported in each study ranged from 2.4% to 76.5%. Delayed treatment, missed or incorrect initial diagnosis and adverse events following a procedure were commonly associated with preventable trauma deaths and could be targeted to develop quality improvement and monitoring projects.

Keywords: errors, preventable trauma death, systematic review

MP48

Head computerized tomography overuse in adults with mild traumatic brain injury in a single Quebec emergency department

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Introduction: Choosing Wisely Canada has reported rates of unnecessary head computed tomography (CT) scans for low-risk mild traumatic brain injury (mTBI) patients in Ontario and Alberta ranging from 14% to 46%. Local data for Quebec is currently not available. We sought to estimate the overuse of CT scans among adults with mTBI in the emergency department (ED) of a single level II trauma center in Quebec. **Methods:** We performed a retrospective chart review of adults who visited the ED of Hôtel-Dieu de Lévis from 04/01/2016 to 03/31/2017. Using an administrative database (Med-GPS, Montreal), we randomly sampled ED patients aged over 18 that had an initial Glasgow Coma Scale score of 13 to 15 and had suffered from a mTBI in the last 24 hours. We excluded patients with an unclear history of trauma, a bleeding disorder/anticoagulation, a history of seizure, any acute focal neurological deficit, a return visit for reassessment of the same injury, unstable vital signs, or a pregnancy. Data was extracted by two reviewers who analyzed separate charts. They used the Canadian CT Head Rule (CCHR) to determine relevance of CT scans. Overuse was determined if a patient without any high or medium risk CCHR criteria underwent a scan. A third reviewer verified a 10% random sample of the data extraction for each primary reviewer and inter-rater reliability was assessed using the kappa statistic. **Results:** From the 942 eligible mTBI patients, we randomly selected 418 patient charts to review, of which 217 met all inclusion and exclusion criteria (56% were men and the mean age was 48 years old (SD = 21)). Among included patients, 101 were determined as low risk. The overuse proportion was 26% (26/101), 95% CI [18-35]. Two CT scans were assessed as abnormal, but none revealed life-threatening injuries and only one was considered clinically significant with a subdural hematoma of 9 mm. Inter-rater reliability was substantial to perfect (kappa = 0.6 and 1.0) for each primary reviewer. **Conclusion:** We identified head CT scan overuse in this ED. This will support local quality improvement initiatives to reduce unnecessary head CT scans for adults with mTBI.

Keywords: computed tomography scan, emergency department, mild traumatic brain injury

MP49

Does reduced cough capacity in minor thoracic trauma leads to more atelectasis development?

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Introduction: Minor thoracic trauma (MTT) accounts for approximately 15% of all injuries treated in the emergency

department (ED). Many of which are minor and will be handled on an outpatient basis. MTT and rib fractures especially cause non-negligible pain. The pain experienced by patients can lead to reduced pulmonary function, decrease mucous clearance and decrease cough capacity leading in infectious problems and atelectasis. To our knowledge, there is no study of atelectasis development caused by reduced cough capacity in the setting of MTT. **Objective:** Evaluate if a variation in cough capacity leads to atelectasis development. Evaluate if there was a difference in cough capacity perception between the nurse, the physician and the patient himself. **Methods:** A prospective observational cohort study (2006-2012) in 4 ED recruited patients with a chief complaint of MTT, ≥ 16 years old, discharged home from the ED. Exclusion criteria: 1) a confirmed hemothorax, pneumothorax, flail chest, lung contusion or any other important thoracic or abdominal internal injury at the initial visit or unable to attend follow-up visits. Patients were assessed at 7- and 14- days. For each patient, age, sex, mechanism of injury, dyspnea, COPD/asthma and smoking status were collected. Chest x-ray was done at each visit; pulmonary complications were assessed by a blind radiologist. Cough capacity was assessed on a scale of 0 to 10 by a nurse, physician and patient himself at 0, 7- and 14- days. Pain was scored on a scale of 0 to 10. Chi-squared and odds ratio (IC: 95%. $p \leq 0.05$) were assessed to determine if the cough capacity variation leads to atelectasis development. A Pearson correlation test was assessed the correlation in cough capacity among participants. **Results:** 1474 patients were recruited. Initial visit: 9% had atelectasis, 7 days: 7% and 4.6% at 14 days. 1105 patients were retained for analysis after exclusion of missing data. The median initial pain score was 7-8 for all patient categories. At 7 days, the odds ratio of atelectasis development were (score (0-3) 1.18 (0.42-3.34); score (4-7) 1.20 (0.48-3.03); $p \leq 0.05$). The Pearson correlation of cough capacity assessment, in patients without atelectasis were (0.53 nurse vs. patient; 0.37 physician vs. patient; 0.51 nurse vs. physician $p \leq 0.05$). As for the cough capacity perception correlation in patients with atelectasis were (0.62 nurse vs. patient; 0.40 physician vs. patient; 0.51 nurse vs. physician; $p \leq 0.05$). **Conclusion:** There is no statistically significant difference in atelectasis development depending on cough capacity and there is poor correlation regarding the perception of cough capacity except for the nurse. It would be interesting to develop a patient reported outcome measure questionnaire which targets minor thoracic trauma as it is a common emergency department complaint and it could help us improve medical management and patient quality of life

Keywords: atelectasis, cough capacity, minor thoracic trauma

MP50

Vaping, tobacco and cannabis among patients presenting to the emergency department: a cross-sectional study

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Introduction: Inhaled toxins from tobacco smoking, cannabis leaf smoking as well as vaping/e-cigarette products use are known causes of cardio-respiratory injury. While tobacco smoking has decreased among Canadian adults, there are now several other forms of legal inhalant products. While legal, the evidence of benefit and safety of vaping is limited. Of concern, cases of e-cigarette or vaping products use associated lung injury (EVALI) have been accumulating in the U.S. and now in Canada. Despite this, very little is known about the inhalation exposure of emergency department (ED) patients; this